

AMENDMENTS TO THE CLAIMS

This listing of the claims shall replace all prior versions and listing of the claims in this application:

1. (Currently amended) A method for increasing through-put of a storage controller by dynamically adjusting host delay, the storage controller coupled to one or more host devices and to one or more disk storage units, the disk storage units collectively comprising a plurality of logical ranks, the method comprising:

allocating a predetermined portion of a temporary storage to each of the plurality of logical ranks;

establishing an initial destage mode whereby data is destaged from a portion of the temporary storage to ~~the~~ a corresponding logical rank at a predetermined rate relative to the rate at which host write requests are processed and stored in the temporary storage, the initial destage mode equaling 0 whereby no correlation is present between the number of destages required before a new write request is processed;

destaging a data update from the temporary storage to a target rank;

evaluating workload conditions of the temporary memory to determine whether a backlog is present; and

modifying the initial destage mode in response to the evaluation by changing the destage mode to 3 if a backlog is present.

2. (Original) The method of claim 1, wherein:

the temporary storage comprises:

a cache memory; and

a non-volatile storage memory ("NVS"); and

destaging a data update comprises destaging the data update from the NVS.

3. (Currently amended) The method of claim 2, wherein evaluating the workload conditions comprises evaluating the available capacity of the NVS.

4. (Original) The method of claim 1, wherein evaluating the workload conditions comprises determining if the temporary storage is receiving host write requests faster than stored data updates are destaged.
5. (Previously presented) The method of claim 1, wherein the initial destage mode comprises a destage to write request ratio of 3.
6. (Original) The method of claim 5, wherein the modified destage mode comprises a destage to write request ratio of less than 3.
7. (Original) The method of claim 1, wherein evaluating the workload conditions comprises evaluating long path-length processes.
8. (Cancelled)
9. (Currently amended) The method of claim 8~~1~~, wherein evaluating the workload conditions comprises evaluating whether a backlog is in danger of being created.
10. (Original) The method of claim 9, wherein modifying the destage mode comprises changing the destage mode to 1 if a backlog is in danger of being created.
- 11-12. (Cancelled)
13. (Currently amended) The method of claim 12, wherein modifying the destage mode comprises changing the destage mode to 2 if the backlog is reduced.
14. (Currently amended) A storage control unit coupled to one or more host devices and to one or more disk storage units, the disk storage units collectively comprising a plurality of logical ranks, the storage control unit comprising:
 - a temporary storage having predetermined portions each of which is allocated one of the plurality of logical ranks;
 - means for processing write requests received from a host device;

means for directing that data update associated with each write request be stored in one of the predetermined portions of the temporary storage; and

means for directing that each data update be destaged from the predetermined portion to ~~the~~ a corresponding logical rank at a predetermined destage rate relative to the rate at which write requests are processed and stored in the temporary storage, the initial destage mode equaling 0 whereby no correlation is present between the number of destages required before a new write request is processed;

means for evaluating workload conditions of the temporary memory comprising means for determining if a backlog is in danger of being created in the temporary storage such that the means for processing write requests is receiving write requests faster than stored data updates are destaged; and

~~modifying the destage rate in response to the evaluation~~the means for directing that each data update be destaged directs that each data update be destaged at a modified destage rate of 3 if a backlog is present.

15. (Original) The storage control unit of claim 14, the temporary storage comprising a non-volatile storage memory ("NVS").

16. (Currently amended) The storage control unit of claim 15, wherein the means for evaluating workload conditions comprises means for evaluating the available capacity of the NVS.

17. (Original) The storage control unit of claim 15, wherein the means for evaluating workload conditions comprises means for evaluating long path-length processes.

18-19. (Cancelled)

20. (Currently amended) The storage control unit of claim ~~14~~9, wherein the means for directing that each data update be destaged directs that each data update be destaged at a modified destage rate of 1 if a backlog is in danger of being created.

21. (Cancelled)

22. (Currently amended) The storage control unit of claim ~~21~~14, wherein the means for directing that each data update be destaged directs that each data update be destaged at a modified destage rate of 2 if the backlog is reduced.

23-30. (Cancelled)